January 8, 2015 Project No.: 073-86114

Kathryn Flynn
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New Jersey Remediation Branch
United States Environmental Protection Agency – Region 2
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RE: RESPONSE TO USEPA AND USACE COMMENTS ON THE FINAL (100%) REMEDIAL DESIGN REPORT, OPERABLE UNIT 1 – PHASE 1 REMEDIAL ACTION, MARTIN AARON SUPERFUND SITE CAMDEN, NEW JERSEY

Dear Ms. Flynn:

On behalf of the Martin Aaron RD/RA Performing Parties (Group), Golder Associates Inc. (Golder) has prepared this response to the United States Environmental Protection Agency's (USEPA's) comments on the September 2014 Final (100%) Remedial Design Report (100% Design) for the Martin Aaron Superfund Site in Camden, New Jersey prepared by Golder. For convenience, USEPA comments are presented below in bold/italic font, followed by the Golder's responses in regular font.

The following comments were received via email by de maximis (Danielle Ondic) on November 12, 2014:

Comment No. 1:

> ***In the 95% Remedial Design, Appendix H Figure 1 had the thickness of the White Material posted for the PDI borings. Figure 5 had the depth of VOC material posted. These depths have been removed from the two figures. The information on Figures 1 and 5 should be corrected, not removed. It is unclear why these depths did not correspond to the cross sections presented and contributes to uncertainty in the design.***

Response:

The thickness of White Material was removed from Figure 1 in Appendix H in the 100% Design to address USEPA concerns about the clarity of this figure, and also because the thickness of White Material was not relevant to the details of the Pre-Excavation Verification Sampling Program. However, the thickness of White Material has been restored in Figure 1 as requested, and its accuracy has been checked against the results of the prior investigations.

The location and elevation of total COC VOCs (TVOC) impacts greater than 1 milligram per kilogram (mg/kg) is reflected on Figure 5A of Appendix H; elevations are not shown for TVOC results less than 1 mg/kg. Golder believes that these elevations provide a more useful guide for the identification of pre-excavation sampling depths. In addition, chemistry boxes displaying the detected COC TVOC concentrations have been provided for sample locations in close proximity to or within the three VOC Sources areas (see Figure 5B). The limits of the VOC Source areas shown in Figures 5A and 5B were taken from the Pre-Design Investigation (PDI) Report.

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Comment No. 2:

The response to USEPA Comment No. 46 on the 95% Remedial Design is not adequate. The locations of all completed borings are on the PDI figures PDI-3 and PDI-4, but the data is not posted on these figures. Also, without the REAs shown on this figure, it can't be confirmed that the previous samples are within six inches of each REA. Without complete information, it is impossible for EPA to verify that the pre-excavation sampling will delineate the extent of arsenic and VOC source material and provide enough information to create excavation drawings.

Response:

Four figures (Figures 1 through 4) have been prepared to display PDI sample locations along with COC TVOC and arsenic concentration data. REA boundaries and estimated bottom elevations are shown on these figures. These REA boundaries and bottom elevations will be modified in final Excavation Drawings, which will be provided with the Remedial Action Work Plan, based on data collected during implementation of the Pre-Excavation Verification Sampling Program.

Comment No. 3: Page 33, Section 3.4.6.3.5 and Drawing 1

How is the practical Limit of Excavation defined along the Everett Street side of the site? On Drawing 5 and Figure 4 of Appendix H, this border is shown as "REA excavation boundary to be pre-delineated prior to excavation" but also as the "Practical Limit of Excavation".

Response:

The Practical Limit of Excavation along the Everett Street (north) side of the Site follows the Interpreted Maximum Extent of White Material, presented on Figure 11 of the PDI Report. This limit was established based on interpretation of both analytical data and visual observations made during prior drilling and test pitting investigations. It is also coincident with the current perimeter REA boundaries along the Everett Street side of the Site. The final perimeter REA boundary along Everett Street will be adjusted as necessary based on the test borings and laboratory testing to be performed during the Pre-Excavation Verification Sampling Program. The final coincident excavation limit and perimeter REA boundary along Everett Street will be shown on the final Excavation Drawings which will be submitted with the RAWP. Notes have been added to Figure 4 of Appendix H (Note 9) and Drawing 5 (Note 8) to clarify that the Practical Limit of Excavation along Everett Street will be adjusted to be coincident with the final REA excavation boundary after completion of Pre-Excavation Verification Sampling Program.

Comment No. 4: Section 3.7.1.1 Overburden Excavation Zone and Drawing 5

There are PE series samples of historic fill with concentrations of arsenic greater than 300 mg/kg that are missing from this list and the drawing. These samples are located near the Ponte building.

Response:

Twenty three Ponte Equities (PE) series borings which were completed by Lockheed Martin on behalf of USEPA in January 2006 have been included on Figures 1 through 4. Based on data collected by others on the Pontes Equities property (USEPA, 2006, Lockheed Martin 2006a), arsenic exceeding 300 mg/kg is present in Historic Fill at borings PE06, PE09, and PE12. As such, these locations have been identified for localized removal and off-site disposal of Overburden, as shown on Drawing 5. This approach is consistent with six PDI-borings with arsenic concentrations in Historic Fill greater than 300 mg/kg (see Section 3.4.7.1.2 of the 100% Design). The locations of borings ESB-1014 and PE06 are essentially coincident and will be managed as a single location. The 100% Design narrative has been updated to include reference to the three additional PE-borings containing arsenic Source Material concentrations (Section 3.4.7.1.2).

Comment No. 5: Sections 3.4.7.1 and 3.4.7.1.2

There are no sidewall samples proposed for the overburden arsenic samples, though they are not within the VOC areas. Explain why a 10 x 10 foot area is proposed here, instead of an approach like the PCB sampling. Even if these borings are just scanned with XRF, that would provide more information to confirm that arsenic source material in the overburden will be removed.

Response:

Post-excavation sidewall samples were not proposed at the 10-foot (ft) by 10-ft arsenic excavation locations within the Overburden because the surrounding Overburden will be sampled and screened for arsenic using XRF prior to its acceptance as on-site backfill, as described in Section 3.4.7.1.3. However, the Group has agreed to collect post-excavation sidewall samples from each side of the 10-ft by 10-ft overburden arsenic removal areas. A bottom sample will only be collected if underlying historic fill does not contain White Material and is being considered for reuse on-site as backfill. Sampling and XRF screening requirements have been added to the 100% Design (Section 3.4.7.1.2), Technical Specification 02221 Material Management, and to the Construction Quality Assurance Project Plan.

This approach for localized excavations (now supplemented with post-excavation sampling) is considered appropriate, rather than the pre-excavation samples proposed for PCB areas. The pre-excavation samples are required for the PCB areas since this data is needed to make decisions regarding management and/or disposal of PCB-impacted materials. However, decisions regarding management of historic fill (on-site reuse versus off-site disposal) will be made in the field based on the results of XRF screening. As such, it is not necessary to collect pre-excavation samples of Historic Fill for fixed-laboratory analysis at the localized excavations.

Comment No. 6: Sections 3.4.7.1 and 3.4.7.1.2

Also, the overburden arsenic locations are not included in the pre-ex sampling plan and must be added.

Response:

The final limits of excavation at overburden arsenic locations based on collection of samples for fixed-laboratory analysis will not be determined as part of the Pre-Excavation Verification Sampling Program, and therefore these locations have not been shown on any of the figures associated with that program. Instead, the final limits of excavation of overburden arsenic locations referenced in this comment will be determined during post-excavation sampling and XRF screening, as described in the response to Comment No. 5.

Comment No. 7: Sections 3.4.7.1.2 and 3.4.8

There should be either pre or post excavation verification sampling included for the arsenic areas within the overburden. Also, the arsenic areas within the overburden associated with samples ESB-1019-08 and ESB-1023-12 appear to be located within the white material according to the REA Schedule on Drawing 5 and may not need separate removal

Response:

As stated in the response to Comment No. 5, bottom samples, when appropriate, and sidewall samples will be collected post-excavation from each of the 10-ft by 10-ft arsenic areas during remedy implementation, and the samples will be screened in the field using the XRF analyzer.

With respect to the location (depth) of elevated arsenic concentrations within borings ESB-1019 and ESB-1023, USEPA is correct that they are located within the White Material thickness as indicated on

the REA schedule for the REAs containing these samples. The Group intends to locally excavate these two locations over the excavation intervals listed in connection with these samples in Section 3.4.7.1.2 in the 100% Design. If White Material is encountered within the historic fill or if XRF screening indicates an exceedance of the arsenic Source concentration in a sidewall, the excavations will be expanded and managed as described in the 100% Design (Section 3.4.7.1.2).

Comment No. 8: Page 34, Section 3.4.7.1

XRF arsenic screening thresholds are set at 234 mg/kg and 139 mg/kg for Historic Fill and MMC. This memo indicates that the thresholds will be updated as new data is available. EPA will review and approve a revised XRF correlation if it is proposed in the Remedial Action Work Plan, but the correlation included here must be applied during pre-excavation sampling.

Response:

The XRF correlation values will not be updated until after completion of the Pre-Excavation Verification Sampling Program. Updates to the correlation values, if any, will be provided as part of the Remedial Action Work Plan for review and approval by the USEPA.

Further, the 100% Design has been updated to indicate that the 99% confidence values will be used for all XRF screening, both during the Pre-Excavation Verification Sampling Program and during the implementation of the Remedial Action. Currently, the 99% confidence values are 234 mg/kg for arsenic when XRF screening Historic Fill, and 139 mg/kg for arsenic when screening MMC.

Comment No. 9: Section 3.4.8.1

The target depths for VOC samples based on previous results and PID screening seems to make sampling more complicated. Were there elevated PID readings during the PDI sampling? Please discuss briefly here to support the proposed approach.

Response:

Elevated PID readings were recorded during the PDI investigation and are reported on numerous test boring logs. Similar to the approach utilized during the PDI, PID screening will guide sample collection for VOCs during the Pre-Excavation Verification Sampling Program. However, if no PID readings are detected in a screened soil core, previously collected fixed-laboratory analytical data from adjacent soil borings will be used to guide selection of a sampling interval, as described further in Sections 2.2.1 and 2.2.2 of the Pre-Excavation Verification Sampling Plan (Appendix H). A summary of the VOC sampling process also has been added to Section 3.4.8.1 of the 100% Design narrative.

Comment No. 10:

List borings that the estimate of 1.5 foot thickness for the transition zone is based on. This can be confirmed during the pre-excavation sampling, but it would be helpful to have more information here.

Response:

The 1.5-foot thickness of the Transition Zone does not represent a mapped stratigraphic layer within the Overburden. Rather, this 1.5-foot thickness was established during the design as a buffer zone above the Historic Fill - White Material interface to account for potential variability in the top of the White Material between sampling locations. Excavation within this 1.5-foot thick Transition Zone will also require an increased frequency of XRF screening, as described in Section 3.4.7.1 in the 100% Design as compared to the frequency of screening in the Overburden Zone. It will also require

more shallow cuts with an excavator bucket to deepen the excavation within the Transition Zone (i.e., approximately 0.5-foot instead of 1-foot thick more typically used for mass excavation).

Section 3.4.7.1.1 has been updated to clarify this concept, including update of text that suggested the Transition Zone thickness was based on data from PDI borings.

Comment No. 11:

Drawing 5 shows six samples where arsenic concentrations are greater than 300 mg/kg in the historic fill material. However, there are also PE series samples from the RI where the fill has elevated concentrations, possibly located in Q4A6 and Q4A10. These were previously presented on draft maps submitted during the PDI and appear to be in Q4A6 and Q4A10.

Response:

The locations of the PE-borings containing arsenic concentrations greater than 300 mg/kg in historic fill have been included in Drawing 5 in the 100% Design. As described further in the response to Comment #4, localized removal and off-site disposal of Overburden will be performed at these locations. Additionally, the 100% Design narrative has been updated to include reference to the three additional PE-borings containing arsenic Source Material concentrations (Section 3.4.7.1.2).

Comment No. 12:

Drawing 6: Explain what the stepped REA bottom elevation means in the report text. Will this apply to the entire REA or just a part of it? Will it be bound by shallower verification samples?

Response:

The Remedial Designer (RD) will develop final Excavation Drawings showing REA bottom elevations based on fixed-laboratory data from both the PDI and the Pre-Excavation Verification Sampling Program. The RD will initially develop an undulating excavation bottom surface utilizing AutoCAD Civil 3D (or comparable software) to interpolate between data points. However, because excavating to an undulating surface is not practical in the field, a series of flat-bottomed excavation bottoms will be defined at or below the depths indicated by the modeled surface and fixed-laboratory data. Given the anticipated variation in the excavation bottom surface, and the practical goal of flat excavation bottoms, “steps” may be constructed within the excavation area. The number and location of these “steps” (i.e. changes in bottom elevation) will be determined based on the depth/location of fixed-laboratory samples as well as input from the Remedial Action Contractor regarding the impacts of the “steps” on its implementation approach. In all cases, the excavation bottom will be defined by fixed-laboratory samples collection at a frequency of at least 1 sample per 900 square feet, so that there are no fixed-laboratory samples exceeding the cleanup goals outside or below the limits of the remedial excavations.

Based on discussions with USEPA, if a “step” results in a change in elevation of 2 feet of more, sidewall samples will be collected from the wall of the “step” at 30-foot spacing. If temporary sheeting forms the boundary between adjacent stepped excavation areas, sidewall samples will be collected within 12 inches of the face of the sheeting on the side of the shallower excavation. In the case of arsenic samples, sidewall samples will be screened in the field using an XRF analyzer, and the 99% confidence value will be used to verify the sidewall concentrations are less than 300 mg/kg of arsenic. Sidewall samples collected between steps in VOC source excavations will be submitted for rapid turnaround fixed-laboratory analysis.

A discussion of excavation steps has been added to Section 3.4.6.1.1 of the 100% Design and to Section 3.3.4 of the Construction Quality Assurance Project Plan.

Comment No. 13: Appendix H

Step outs will be 10 to 25 feet from the REA perimeter boundary, but how will the REA boundaries be marked before sampling? If they will be surveyed, this should be included in the plan here.

Response:

A licensed surveyor will be engaged to locate the proposed pre-excavation verification sampling locations at the beginning of the program (Section 5.4 of Appendix H). Since the sidewall borings will be located along the REA perimeter boundary at a spacing of at least one boring per 30 linear feet, the perimeter boundary will, by co-location with the borings, be defined by surveyed points.

Additionally, upon completion of the program, a surveyor will also determine the locations of any subsequent step-out or off-set borings.

Comment No. 14:

It is understood that the results from the Pre-Excavation Verification samples will be utilized to establish the final excavation drawings and the excavation drawings along with additional supporting data and figures will be provided in the RAWP. Recommend one of the supporting figures include both the limits of the REAs and the locations of all new and existing borings and test pits.

Response:

As noted, the RAWP will include figures that depict the limits of the REAs as well as the location of all new and existing borings and test pits.

The results of the Pre-Excavation Verification Sampling Program will be presented in tables and figures. The final Excavation Drawings will include the final REA boundaries and bottom elevations for USEPA review, along with sample locations and annotated sample results presented in chemistry boxes. Information will be presented on the figures to allow USEPA to verify that final REA excavation bottom elevations have been set to allow for the removal of all material encountered in the fixed-laboratory tested samples with an arsenic concentration greater than 300 mg/kg, and COC TVOCs greater than 1 mg/kg.

Comment No. 15:

Were responses to comments on the QAPP submitted? Comments on the QAPP worksheets were sent with the Sampling Plan Comments, noted as USEPA Comments 81-84 in Golder's September 26, 2014 letter.

Response:

Responses to comments on the QAPP were provided on pages 18 and 19 of the Response to Comments letter contained in the 100% Design.

Comment Nos. 16 thru 21: Editorial Comments

16. Page ii: Section 8.0 has ERROR! BOOKMARK NOT DEFINED

17. Appendix H Figure 9 has two different sizes of borings that aren't defined in the legend.

18. Page 25 states "Arsenic Source Material and arsenic-impacted MMC", this should be corrected to just "arsenic source material" or "White Material and Arsenic-Impacted MMC".

19. Page 39, 3.4.7.1.2: The reference to Exhibits 5 and 6 should include page 63, since the PDI exhibits are not numbered.

20. Page 44, 3.4.7.3: Add "found" into "Except for the slab areas where PCBs were found during the PDI".

21. Page 64, 3.4.12.1: Remove "that" from second sentence on PCB-impacted material; "These areas that will be restricted for use as low occupancy areas"

Response:

The above-listed editorial changes have been incorporated in the 100% Design.

The following comments were received via email by Danielle Ondic (de maximis) on November 6. 2014. These comments focus on the 1,200 square foot bottom sample spacing proposed in the Pre-Excavation Verification Sampling Plan. Rather than addressing specific details in each comment, a response is provided related to the Group's acceptance of 900 square foot bottom sample spacing.

Comment No. 22:

It seems that the 100% Remedial Design does not seem to include a justification for the spacing of one sample per 1,200 square feet in the VOC source areas. Please let me know if this is included and I have just missed it in the text on page 49.

Response:

Bottom arsenic and VOC samples will be collected during the Pre-Excavation Verification Sampling Program at a frequency of at least 1 sample per 900 square feet within the REA boundaries as directed by USEPA during a call on November 17, 2014 between USEPA, NJDEP, de maximis and Golder. Samples may be collected at any location within each 900 square foot area and not necessarily at nodal points of a sampling grid. Sample locations will be biased to the area of highest suspected contamination within a 900 square foot area. The revised sampling frequency has been reflected in the Pre-Excavation Verification Sampling Plan (Appendix H) and the revised 100% Design.

Comment No. 23:

Page 52, "′ The CSM accepted by USEPA in the PDI Report demonstrated that geochemical reactions between the MMC layer and arsenic result in declining concentrations of arsenic with depth as a result of natural geochemical processes. Bottom verification samples are all located in the MMC layer;"
- The depth of the verification samples does not inform the 1,200 square foot spacing here. The accepted CSM informs the vertical delineation of arsenic, not the horizontal spacing of samples.

Response:

As stated in the response to Comment No. 22, bottom arsenic and VOC samples will be collected during the Pre-Excavation Verification Sampling Program at a frequency of at least 1 sample per 900 square feet within the REA boundaries.

Comment No. 24:

Page 52, "′ PDI samples used to determine the average spacing calculation show a vertical attenuation gradient within the MMC that has been used to develop the targeted spacing and bottom sample depths for the pre-excavation verification samples. Furthermore, selection of the sample depth for verification will be made with the use of XRF screening during the investigation, using a 95% confidence level recommended in USEPA and NJDEP guidance to select samples for fixed-laboratory analysis; and,"
- The calculation applying the vertical gradient to target spacing is not included here or in Appendix H.
- Also, the XRF screening of sample depth is again not a reason for the horizontal spacing of samples.

Response:

As stated in the response to Comment No. 22, bottom arsenic and VOC samples will be collected during the Pre-Excavation Verification Sampling Program at a frequency of at least 1 sample per 900 square feet within the REA boundaries.

Comment No. 25:

Page 52, "′ While NJDEP's guidance for verifying attainment of NJDEP remediation standards allows compliance averaging of verification sample results for comparison against its standards, compliance averaging is not being used in this sampling program. The verification program requires each sample result to comply with the site-specific goal for arsenic of 300 mg/kg, which is more stringent than NJDEP guidance."
- Compliance averaging is not being applied at the Martin Aaron Site and was not approved in the RDWP.

Response:

Each sample collected during the Pre-Excavation Verification Sampling Program will comply with the site-specific Source removal goal for arsenic of 300 mg/kg and for COC TVOCs of 1 mg/kg.

Very truly yours,

GOLDER ASSOCIATES INC.

Andrew Harpur, PE
Senior Engineer

Robert E. Stetkar, PE
Principal

Attachment

AH/RES:lrr

September 26, 2014 Project No.: 073-86114

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RE: RESPONSE TO USEPA AND USACE COMMENTS ON THE PRE-FINAL (95%) REMEDIAL DESIGN REPORT, OPERABLE UNIT 1 – PHASE 1 REMEDIAL ACTION, MARTIN AARON SUPERFUND SITE CAMDEN, NEW JERSEY

Dear Ms. Flynn:

On behalf of the Martin Aaron RD/RA Performing Parties (Group), Golder Associates Inc. (Golder) has prepared this response to the United States Environmental Protection Agency's (USEPA's) and the United States Army Corps of Engineers (USACE's) comments on the July 2014 Draft Pre-Final (95%) Remedial Design Report (95% Design) for the Martin Aaron Superfund Site in Camden, New Jersey prepared by Golder. These comments were received in two stages by emails received on August 4, 2014 (providing USEPA comments) and August 11, 2014 (providing U.S. Army Corps of Engineers/USACE comments forwarded by USEPA). For convenience, USEPA and USACE (collectively "Agency") comments are presented below in bold/italic font, followed by the Golder's responses in regular font.

These responses, along with the updated remedial design documents, represent the Final (100%) Remedial Design Report (100% Design) for Operable Unit 1, Phase 1 Remedial Action (RA) for the Martin Aaron Superfund Site

RESPONSES TO USEPA AUGUST 4, 2014 COMMENTS

AUGUST 4, 2014 GENERAL COMMENTS

USEPA Comment No. 1:

> ***All of the language needs to be consistent with the ROD and the SOW. All material with arsenic concentrations greater than 300 mg/kg is Source Area soils, including the Historic Fill and MMC necessary.***

Response:

> Section 1.2 (Material Descriptions for Design) has been revised in the 100% Design to include the language in the ROD and SOW. The references to materials included in the 100% Design also will be consistent with the terminology used in the final Pre-Design Investigation Report (PDI Report or PDI) previously accepted by the Agencies, so that these reports are consistent.

USEPA Comment No. 2:

> ***For arsenic screening by XRF in the field, the use of the 99% confidence value needs to be consistent throughout the text and the Appendices.***

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Response:

The 95% Design text purposely refers to two different confidence values: the 95% and 99% confidence values. However, the text did not clearly identity where and how each confidence value will be used. The 100% Design includes additional references in the text regarding the uses of these two confidence values.

The 99% confidence value is referenced in Table 2, Appendix M throughout the text, Drawings and Appendices where arsenic screening by XRF will be used in the field to determine acceptability of Overburden to remain on-site. Appendix M provides the justification for use of this confidence value developed for samples with arsenic concentrations less than 300 mg/kg in Overburden. Where XRF screening will only be used for guiding the selection of samples to be collected and tested in a fixed-laboratory, the 95% confidence value provided in Table 1, Appendix M will be used. This is consistent with both USEPA guidance (e.g., OSWER 9285.6-10 *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites)* and New Jersey Department of Environmental Protection (NJDEP) guidance.

AUGUST 4, 2014 SPECIFIC COMMENTS - TEXT

USEPA Comment No. 3: Text – page 13, 1st bullet

Need to cite the source and year of this data.

Response:

The text has been revised as requested in the 100% Design.

USEPA Comment No. 4: Text – page 15, 1st paragraph

"Source" and impacted materials need to be revised here to be consistent with the ROD.

Response:

See response to USEPA Comment No. 1. Golder believes that USEPA meant to refer to page 16, 1st paragraph in Comment No. 4.

USEPA Comment No. 5: Text – page 28

For Step 1, what does "Excavate vertically to the bottom of the footing along the extent of the north side of the building" mean? Is this REA Q1V3? Detail of this vertical excavation should be added to Drawing 8.

Response:

The steps listed on page 28 of the 95% Design and referenced in this comment refer to REA Q1V4 as shown on Drawings 5, and Section A on Drawing 8. Each slot trench excavation performed within the portion of REA Q1V4 adjacent to the Comarco building will initially be extended vertically downward against the outer face of the building wall until the footing is encountered to determine the distance that the outer edge of the footing extends beyond the face of the wall. The excavation will then continue downward below the outer edge of the footing, as shown on Section A on Drawing 8. The steps and text in Section 3.4.6.3.3 as well as Section A on Drawing 8 provide the further details requested in this comment.

USEPA Comment No. 6: Text – 31, final paragraph

Need to note where these disturbances are.

Response:

The text has been revised as requested in the 100% Design.

USEPA Comment No. 7: Text – page 32

This reference to Section 3.4.6.3 should be 3.4.7.3.

Response:

The text has been corrected in the 100% Design.

USEPA Comment No. 8: Text – page 33, Section 3.4.7.1

EPA is concerned that there is insufficient visual evidence to distinguish the upper, lower, and transition zones of overburden material. Provide more information about how these contacts were found in the field, including photographs.

Response:

As stated in the PDI Report, the presence of White Material was initially discovered visually and subsequently verified to be the Arsenic Source Material by samples and analyses. Numerous photos are presented in PDI Report Appendix E-5, (Photos 9, 14, 17, 18, 21, 23, 28, 29, 31, 33, 34, 35, and 38); and Appendix G-5 (Photos 1, 3, 32, 36, 40, 44, 45, 46, 47, E27, and E28) that show the White Material as a distinct material from other Site materials. Golder and the Martin Aaron Superfund Site Settling Performing Defendants (Group) believe there is a high degree of confidence in being able to visually distinguish White Material from other Site materials during the RA.

In response to USEPA comments the 100% Design reflects the segregation of Overburden into two zones (Upper and Transition), rather than three zones (Upper, Lower and Transition) as was presented in the 95% Design. In addition to visual logging, the development of the two Overburden zones was also based on the results of seventy-nine (79) fixed-laboratory samples collected from Overburden within the Limits of Soil Remediation during prior investigations. These analytical results presented in the PDI, in addition to the confident ability to identify visually the presence of White Material, have led Golder to conclude that the methods proposed in the 100% Design can be used to distinguish the Upper and Transition Zones.

We appreciate, however, that there were six samples of Overburden where arsenic was detected at a concentration above 300 mg/kg. The locations of these samples have been incorporated into the 100% Design as Arsenic Source Remedial Excavation Areas in Historic Fill as shown on Drawing 5. The treatment of these REAs is presented in Section 3.4.7.1.2 and depicted on Drawing 6.

Based on field experience of a number of individuals during prior phases of investigations, and as shown in photographs provided in the PDI, White Material can be distinguished from historic fill based on the significant differences in physical appearance (color, composition and odor). It is expected that the Quality Assurance Official (QAO) and USEPA's on-site oversight personnel will be able to readily observe White Material in excavations, the excavator bucket and material stockpiles. During implementation of the remedy, full-time oversight of excavation activities will be provided by the QAO and presumably by a representative from USEPA. In the 100% Design the QAO has been tasked with the responsibility for visually observing and XRF screening both the Upper and Transition Zones. If at any point during the process the USEPA representative is concerned with the visual classification made by the QAO of the upper zone material, the USEPA representative can request a sample of the material to be tested using the XRF analyzer.

USEPA Comment No.9: Text – page 33, 3rd paragraph

Insert "arsenic" into The PDI found that arsenic Source Area materials."

Response:

The text in the 100% Design has been revised as requested.

USEPA Comment No. 10: Text – page 34, 3rd paragraph

Revise the first sentence to state, "The XRF threshold will be set to 234 mg/kg in accordance with the XRF correlation memo presented in Appendix M."

Response:

While 234 mg/kg is the current 99% confidence value that will be used initially, Appendix M allows for modification of the 99% confidence value based on the accumulation of additional data. The 100% Design Report text has been modified to read "*For XRF screening of Overburden, the 99% confidence value will be initially set at 234 mg/kg and subsequently adjusted using new data and procedures presented in Appendix M."*

USEPA Comment No. 11: Text – page 36, 4th paragraph

The allowable 18-inch maximum size for concrete and masonry conflicts with the particle size of 12 inches in the Backfill and Fill Spec 02223. Correct the text here.

Response:

Agreed. The 100% Design Report text has been edited to indicate a 12-inch maximum size for concrete and masonry, in agreement with the cited specification.

USEPA Comment No. 12: Text – page 35, 4th paragraph

PCBs are addressed in 3.4.7.3 – correct this reference.

Response:

The text has been corrected in the 100% Design.

USEPA Comment No. 13: Text – page 38

The landfill must also be acceptable to EPA per the off-site rule.

Response:

Agreed. The 100% Design Report text has been edited to be consistent with Section 02221 Material Management, Paragraph 3.01D, which stipulates that disposal facilities are subject to approval by USEPA.

USEPA Comment No. 14: Text – page 39, 2nd and 3rd paragraphs

Won't there need to be additional sampling for constituents other than arsenic before material is transported? Also, what about the MMC? There is no treatability data for this material, when will this be evaluated?

Response:

The need for sampling for constituents other than arsenic in any Source Materials being disposed off-site will be determined by the disposal facilities which have yet to be identified. The Group's experience is that some additional sampling will be required, but the Group or the Remedial Action Contractor (RAC) will not be able to identify what that may be for the 100% Design. Because such additional sampling will not affect the determination of the volume of Source Material required by the ROD to be removed from the Site, further detail on such waste characterization will be addressed prior to the beginning of remediation, and is currently anticipated to be addressed in greater detail during the preparation of the Remedial Action Work Plan (RAWP).

USEPA Comment No. 15: Text – page 40

See EPA's comments on Appendix H.

Response:

See responses to USEPA's comments on Appendix H (i.e., USEPA Comment Nos. 41-76 below)

USEPA Comment No. 16: Text – page 40

PCB-impacted concrete/masonry must also be sampled here. Include procedures for sampling the two PCB concrete locations in Section 3.4.8.2 and Appendix H.

Response:

PCB samples of concrete/masonry will be collected during the RA, instead of during implementation of the Pre-Excavation Verification Sampling Plan that is the subject of this comment. Therefore, instead of updating text page 40 and Appendix H in the 100% Design, the 100% Design Report Section 3.4.7.3 and Section 3.3.2 in Appendix J (Construction Quality Assurance Project Plan) have been updated to include the requirements for confirmation sampling during the RA in proximity to the two areas of known PCB-impacted concrete/masonry detected during the PDI. Requirements for sampling these locations have been added to Part 3.08 of Specification Section 02221.

USEPA Comment No. 17: Text – page 43, 1st bullet

Change text about the CSM to "declining concentrations" of arsenic instead of "effective attenuation"

Response:

The text has been changed as requested.

USEPA Comment No. 18: Text – page 43, 2nd bullet

If these other PDI samples are used to justify the proposed spacing and bottom sample depth, they must be included here in the* Appendix H Pre-excavation Verification Sampling Plan *so EPA can confirm they have concentrations below 300 mg/kg.

Response:

All PDI samples that are being used, in conjunction with the proposed pre-excavation samples, to establish REA bottom elevation are shown on Figures 4 and 11 of Appendix H Pre-Excavation Verification Sampling Plan. These data will also be presented in the summary report and accompanying figures to document the findings of the Pre-Excavation Verification Sampling Plan that will be provided with the RAWP for review by USEPA.

USEPA Comment No. 19: Text – page 52, 4th paragraph

Change "visual acceptance" to "XRF screening"

Response:

See Response to USEPA Comment No. 8. In the 100% Design Report, reference to XRF screening has been added to the use of visual methods for evaluating Overburden for either backfill or disposal. The text also has been clarified to state that fixed-laboratory results will be used for evaluating PCB concentrations, and also for identifying source concentrations of arsenic and total VOCs in processed concrete. Concrete structures containing Source Material concentrations of either arsenic or total VOCs will require off-site disposal.

USEPA Comment No. 20: Text – page 53, 3rd paragraph

How will the GCL be applied in the infiltration pit, after the excavation is completed?

Response:

A cushioning layer of soil as described in Section 02223 Backfill and Fill of the Technical Specifications will be placed first over the infiltration pit gravel to form a suitable subgrade as required by Section 02598 Geosynthetic Clay Liner. The GCL will then be placed upon the cushioning layer soil. The 100% Design text has been expanded to include this detail and a note has also been added to Detail 1 on Drawing 9.

USEPA Comment No. 21: Text – page 52, 4th paragraph

What conditions would lead to ponds forming in the center of the site, with this grading?

Response:

Ponds of water within the center of the Site are not anticipated. The specified gradation for cover soil provided in Appendix G, Paragraph 2.02A in Specification 02224 is expected to allow infiltration as currently occurs at the Site, and will not lead to formation of ponds which also have not formed under existing conditions.

USEPA Comment No. 22: Text – page 54

The asphalt sidewalk along South 6th Street should not be labeled "temporary" in the text or drawings, rather it is part of the Site cap.

Response:

The asphalt sidewalk along South 6th Street is not part of the cap. As stated on this page of the text, the two feet of imported clean fill below the sidewalk forms the direct contact barrier cap, and is not temporary. The asphalt sidewalk is provided to produce a pedestrian passage surface over the area until the City of Camden upgrades the existing municipal storm water management system. After that occurs, a concrete sidewalk in compliance with the City code can be constructed without interfering with the underlying remediation soil cap. As requested, the term "temporary" has been removed in the 100% Design text and Drawings.

USEPA Comment No. 23: Text – page 58, 3rd paragraph

Specify that the additional groundwater monitoring will be the Pre-Construction Groundwater Monitoring proposed on the Preliminary Project Schedule.

Response:

The 100% Design text has been revised as requested.

USEPA Comment No. 24: Text – page 60

Well permits for abandonment and installation may need to be obtained by de maximis or Golder, not the RAC.

Response:

Well permits must be obtained by a licensed well driller who will be subcontracted to the RAC as indicated in Sections 02070 Well Decommissioning and 02675 Well Construction of the Technical Specifications. Neither de maximis nor Golder is allowed by NJDEP regulations to obtain such permit.

AUGUST 4, 2014 SPECIFIC COMMENTS – DRAWINGS

USEPA Comment No. 25: Drawing 5A

Add the depths of previous PCB samples here.

Response:

This drawing has been deleted. The PCB sample depths are instead shown on Figure 10 in Appendix H – Pre-Excavation Verification Sampling Plan.

USEPA Comment No. 26: Drawing 6

Include bottom elevations of proposed REAs projected onto these cross-sections, and remove the "Preliminary (First Cut) Limit of Excavation" line.

Response:

Drawing 6 has been revised to include new cross sections.

USEPA Comment No. 27: Drawing 7

- ***Where will tanks for sludge from the large diameter pipe be placed during Stage 1?***
- ***Is it possible to stockpile the overburden material in a location that is farther from the Comarco facility?***

Response:

Management of sludge, if encountered in the large diameter pipe and the locations of temporary facilities will be described in the RAWP.

Stockpile locations shown on the 100% Design are conceptual and meet the requirements of the Technical Specifications. The final locations selected by the RAC also required to conform to Technical Specification requirements will be included in the RAWP. A note has been added to Drawing 7 indicating that stockpiles cannot be placed any closer than 40 feet from the Comarco building, and that any deviation from this is subject to approval of the Group's Representative.

USEPA Comment No. 28: Drawing 8

It looks like the water level of the Cape May aquifer is above the fill material in this zone, this should be clarified.

Response:

The water level of the Cape May aquifer is shown to be possibly above the bottom of the fill material in the schematic Section D near the Ponte Building (located in Quadrant IV). That is because the geotechnical borings completed during the PDI encountered a variable depth to the bottom of fill, which at GTB-3016 extended one to two feet below the Cape May potentiometric level. As shown on the other sections in Drawing 8, the Cape May water level is typically below the contact between the fill material and the MMC layer. This information was known and included in dewatering models and plans included in the 95% Design. As stated in Section 3.4.9.1 of the 100% Design Report, the Cape May Formation potentiometric (or piezometric) level will be lowered via active dewatering prior to excavation into the MMC layer, to avoid destabilizing the excavation bottom.

The references to "Cape May WL" on the section have been revised in the 100% Design to indicate this is the "Cape May Piezometric WL." Golder does not believe other clarification is needed for the reasons stated above.

USEPA Comment No. 29: Drawing 9

In the infiltration pit, will this stone layer remain in place when the clay liner is installed? How are the upper and lower overburden zones distinguished, in general and each specific REA?

Response:

The stone layer will remain in place, but covered with a cushion soil layer before the GCL is installed, as described in the response to USEPA Comment No. 20.

The description of how the Upper and Transition Zones are distinguished is provided in Section 3.4.7.1. Notes have been added to Detail 2 on Drawing 9 in the 100% Design referring to Section 3.4.7.1 for description of how the zones were developed, and referring to the REA Schedule on Drawing 5 for elevations of the bottoms of these zones in each REA.

USEPA Comment No. 30: Drawing 10

Could well 17SM be retained? This well is located in the concrete pad that will not be removed.

Response:

MW-17SM will be retained and protected. Drawing 10 has been edited accordingly in the 100% Design.

USEPA Comment No. 31: Drawing 13

How will this grading plan affect stormwater management? Will the City of Camden approve this cap grading plan?

Response:

The grading plan will not increase the existing runoff from the Site to the surrounding streets, and therefore will not affect municipal stormwater management in the streets abutting the Site. The Camden County Soil Conservation District (CCSCD) has verbally indicated its acceptance of the

grading concept, but an application for a Soil Erosion and Sediment Control Plan Certification Equivalency will be submitted to the CCSCD. NJDEP will also review the grading plan as part of the Flood Hazard Area permit equivalency application. After receipt of these permit equivalencies, the RAC will determine if the City of Camden will require separate approval, especially for grading transitioning at Site property lines shown on the Drawing.

USEPA Comment No. 32: Drawing 14

The "temporary sidewalk" should be a sidewalk cap here.

Response:

See response to USEPA Comment No. 22.

AUGUST 4, 2014 SPECIFIC COMMENTS – APPENDIX B

USEPA Comment No. 33: Appendix B, page 5

The MMC thickness in the model is 1 foot here. How would the model change if the thickness were greater?

Response:

In order for the infiltration pit to function as designed, the MMC needs to be removed to allow water to infiltrate into the Cape May Formation under the head established in the pit. The thickness of the MMC is inconsequential within the limits of the infiltration pit.

USEPA Comment No. 34: Appendix B, page 6, Table 2

Include the time to steady state conditions for all model scenarios.

Response:

Steady-state pumping conditions during dewatering of the Cape May formation within the sheeted excavations are anticipated to occur within the first day after pumping from the fully-installed dewatering system within a sheeted excavation. This is based on extrapolation of the rate of drawdown vs, time measured in the four short-term pumping tests performed during the PDI in Cape May monitoring wells MW-5SM, -16SM, -21SM and -22SM (see Appendix H in the PDI Report). An explanatory footnote has been added to the Table in Appendix B in the 100% Design.

USEPA Comment No. 35: Appendix B, page 17

Was the pit location chosen based on the absence of the lower semi-confining layer in borings GTB-3013 and not in the adjacent borings? Explain this point in the text.

Response:

Yes. GTB-3013 is located in closest proximity to the pit and is therefore considered to be more representative than other borings. Additional explanation has been added to the text in the 100% Design. Further information on the subsurface conditions within the infiltration pit area will be obtained from the pre-excavation verification sample borings planned in this area and shown on Figure 11 in Appendix H – Pre-Excavation Verification Sampling Plan.

The UPRM semi-confining unit is locally missing in some locations on the Site, including the location of boring GTB-3013, although it was encountered in some other borings in the area of the infiltration

pit, including ESB-2010. The location of the infiltration pit was chosen based upon the knowledge of existing subsurface structures in an effort to avoid structures that would inhibit installation of the perimeter sheet piling. In addition, the infiltration pit location was positioned away from the edges of the Site, to minimize the infiltration mounding effects at the Site boundaries, and to facilitate construction phasing.

AUGUST 4, 2014 SPECIFIC COMMENTS – APPENDIX D

USEPA Comment No. 36: Appendix D, page 1, final paragraph

Specify which 3D model is referred to here.

Response:

The 100% Design text for Appendix D has been updated to document the use of 3D geologic modeling using GoCAD®, a visualization model developed by Paradigm®.

USEPA Comment No. 37: Appendix D, page 1

The estimates of cubic yards of material left in place need to be stated as the median of the range presented in Table 1.

Response:

See response to USEPA Comment No. 38.

USEPA Comment No. 38: Appendix D, page 2, 4th paragraph

Insert "median" as follows: "The volumes presented in Table 2 consider median material thicknesses and volumes developed using."

Response:

The volumes presented in Table 2 cannot be described as median values, which imply a statistical calculation of data. Instead, these volumes are based on material thicknesses interpolated using the above-referenced 3D model. These volumes are based on a more sophisticated interpolation of material thicknesses developed using a model that considers spatially-distributed material thickness trends unlike a statistically-calculated median which would ignore the spatial distribution of the materials. The title of Table 2 has been edited to clarify the basis for the tabulated volumes.

USEPA Comment No. 39: Appendix D, page 4, Figure 1

Remove the polygons of VOCs on this map.

Response:

The VOC limits have been removed from Figure 1 in the 100% Design.

AUGUST 4, 2014 SPECIFIC COMMENTS – APPENDIX G

USEPA Comment No. 40: Appendix G, Site Access and Traffic Control Spec 01550

Site Access and Traffic Control Spec 01550 does not include description of the Everett Street closure – this should be described in this section.

Response:

Closure of Everett Street is a potential option that the RAC may pursue. The RAC will be required to coordinate closure of Everett Street with the City of Camden if it elects to close the street. As required in Section 01550, a Site Access and Traffic Control Plan will be included as part of the RAWP, if the RAC elects to close Everett Street. This plan will provide the specifics of how the street will be barricaded (using methods approved by the City of Camden) to prevent its use during the RA.

USEPA Comment No. 41: Appendix G, Site Prep Spec 02100-2

Site Prep Spec 02100-2 includes removing the Ponte chimney stack, has the building's owner granted permission for this removal?

Response:

The owner of the three-story building has granted approval to remove the existing stack from the former Boiler House.

USEPA Comment No. 42: Appendix G, Backfill and Fill Spec 02223

The Backfill and Fill Spec 02223 notes that stockpiled materials shall not be located adjacent to open excavations or materials staged for off-Site disposal, however Drawing 7 depicts stockpiled and off-site materials stored next to each other. Drawing 7 should be revised for the 100% design and the Remedial Action Work Plan must conform to this spec.

Response:

The layout shown on Drawing 7 is a depiction of a potential configuration of stockpiles and other temporary features. Stockpiles will be placed among the indicated locations so as to comply with the Specification requirements depending on the location of open excavations. Note 4 on Drawing 7 has been revised in the 100% Design to provide for either locating stockpiles or placing dividers between adjacent stockpiles to prevent mixing of dissimilar materials as required in Paragraph 3.01C of Specification Section 02223. These performance standards will then be used to determine the acceptability of the layouts and stockpile construction details to be provided in the RAWP.

USEPA Comment No. 43: Appendix G, Construction Dewatering Spec 02140

Construction Dewatering Spec 02140 should include references to all groundwater modeling documents.

Response:

Reference to the groundwater modeling calculations presented in Appendix B of the 100% Design has been added to Section 1.02 of Specification 02140.

USEPA Comment No. 44: Appendix G, Material Management Spec 02221

Material Management Spec 02221 refers to concrete exceeding 10 mg/kg PCBs, which should be 1 mg/kg as per Section 3.7.7.2 of the text.

Response:

The specification has been corrected in the 100% Design.

USEPA Comment No. 45: Appendix G, Decontamination Spec 02431

In Decontamination Spec 02431, what is the source of potable water for the site?

Response:

A fire hydrant is located on the west sidewalk of South 6th Street and should be available to the RAC for use with appropriate permitting and metering as required by the City of Camden. The Decontamination Plan required by Specification Section 02431 to be submitted by the RAC prior to remediation is required to provide such detail.

AUGUST 4, 2014 SPECIFIC COMMENTS – APPENDIX H

USEPA Comment No. 46: Figure 4

Figure 4 is missing locations of some existing fixed-laboratory samples so it can be confirmed that no contamination is deeper than these samples. Include a new figure that has all of the arsenic data to compare to the proposed locations and REA footprint.

Response:

Figure 4 depicts proposed locations for additional pre-excavation verification sample locations. It also shows previously completed samples with fixed-laboratory arsenic results less than 300 ppm that are within 6 inches of the currently assigned depth of each REA shown on Drawing 5. These previously completed locations will serve the same purpose as proposed pre-excavation verification sample locations, which is to verify the bottom elevation of each REA during the Pre-excavation Verification Sampling Program. The fixed-laboratory arsenic data for all previously completed samples can be found in Table 10 of the PDI Report. The locations of all previously completed borings are shown on Figures PDI-3 and PDI-4. See also response to USEPA Comment No. 18.

USEPA Comment No. 47: Figures

The "Pre-delineation zones" in these figures must be explained in text, not just on the maps here. What is the procedure for sampling these areas?

Response:

The narrative in Appendix H of the 100% Design has been expanded to address this comment.

USEPA Comment No. 48: Page 3, 2nd paragraph

This text must be consistent with the ROD. Change "Arsenic Source Material" to "White Material".

Response:

See Response to USEPA Comment No. 1.

USEPA Comment No. 49: Page 4, 1st paragraph

Explain how the presence of proximal samples will be used to determine the 10 or 25 foot distance to step-out borings.

Response:

Additional detail on how concentration gradients observed during the PDI will be used to determine step-out distances ranging from 10 to 25 feet is provided in Appendix H of the 100% Design.

USEPA Comment No. 50: Page 5, 1st paragraph

"the actual sample depths will be selected in the field based on field screening of VOC concentrations using a PID" - The actual sample depth must be at least as deep as any existing fixed-lab sample in the REA.

Response:

This paragraph refers to the use of a PID for guiding selection of a sidewall sample depth. For sidewall samples, the depth of the sample collected for fixed-laboratory analysis will be guided primarily by the depth of the maximum PID readings. However, if no elevated PID readings are encountered, the depth of the sidewall sample will be determined by the fence diagrams showing the depth of the sample exceeding the VOC Source Material concentration in the closest sample location, as described in Appendix H. This is consistent with NJDEP guidance for selecting the depth of sidewall samples using screening techniques. The narrative in Appendix H of the 100% Design has been expanded to address this comment.

USEPA Comment No. 51: Page 5, 5th paragraph

How will the two concrete locations with PCBs be sampled? This information must be added to the text.

Response:

The two concrete structures with elevated PCB concentrations identified during the PDI will not be sampled during the pre-excavation verification sampling program. These samples will be collected as part of the Remedial Action and therefore no changes to the appendix text are necessary. Please note that Section 3.4.7.3 of the 100% Design Report has been edited to provide the requested additional detail. Requirements for sampling these locations have been added to Part 3.08 of Specification Section 02221.

USEPA Comment No. 52: Page 5, 5th paragraph

Location MA-MW-14S must be labeled on Figure 10.

Response:

Labels have been added to Figure 10.

USEPA Comment No. 53: Page 5, 5th paragraph

What is the justification for the zero to three foot depth interval with 6-inch, 18- inch, and 30-inch depth samples? How much material will be samples from these three depths?

Response:

The 6-inch, 18- inch, and 30-inch depth samples were selected to represent the middle of the first, second, and third foot, respectively, below the PCB-impacted material. If the PCB concentration in the 30-inch sample exceeds 1 mg/kg, deeper samples will be collected from an offset boring. Only the minimum sample volume required to perform the analytical tests will be collected.

USEPA Comment No. 54: Page 6, 1st paragraph

"Pre-excavation verification sidewall samples will be collected from the 1-foot interval centered on the bottom of the impacted sampling interval shown on Figure 10" This is confusing, please provide an example for another boring in addition to MA-MW-14S to clarify.

Response:

Section 2.3 has been revised in the 100% Design to indicate that PCB sidewall samples will be collected at the mid-depth between the ground surface and the bottom of the RI sample interval, with multiple sidewall samples collected at ESB-2007 and MA-MW-14S on account of the deeper RI sample intervals at these locations.

USEPA Comment No. 55: Page 6, 2nd paragraph

Explain how the 5 or 10 foot distance to the step-out borings will be chosen.

Response:

PCB step-out borings will be completed within 5 to 10 feet of the prior completed borings and not at 5 or 10 feet. An actual step-out boring location will be determined based the PCB concentration reported in the prior boring with a smaller step-out dimension if PCB concentrations are close to 1 mg/kg and a larger step-out dimension if PCB concentrations are much greater than 1 mg/kg. The step-out dimension will also depend on field conditions (e.g., to avoid surface concrete and known and suspected buried structures). The step-out dimensions are smaller than those proposed for step-out borings to verify the limits of Arsenic Source Material prior to excavation, because the prior investigations did not identify PCB concentration gradients in fill. The step-out dimensions are consistent with dimensions required by USEPA's TSCA branch on several other projects completed by Golder.

USEPA Comment No. 56: Page 7, 2nd paragraph

Appendix M states that the 99% confidence value will be applied, change the 95% interval included here.

Response:

See Response to USEPA General Comment No. 2.

USEPA Comment No. 57: Page 7, 2nd paragraph

"The sample located immediately above the MMC or the sample at the second depth" - Shouldn't "above the MMC" be "below the MMC"?

Response:

The arsenic sidewall sampling strategy has been revised and is reflected in Section 2.1.1 of Appendix H.

USEPA Comment No. 58: Page 7, 4th paragraph

In the Arsenic Attenuation Tech Memo, it looks like ESB-2002, ESB-2005, and ESB-2007 have arsenic concentrations greater than 300 mg/kg deeper than 24 inches into the MMC . How will this be addressed by sampling only 24 inches into the MMC?

Response:

Section 2.1.2 of Appendix H in the 100% Design has been revised to include pre-excavation verification borings extending to 36 inches into the MMC, and that if the fixed-laboratory test result indicates an arsenic concentration greater than 300 mg/kg in the deepest sample, samples will be collected from an offset boring from greater than 36 inches into the MMC and analyzed.

USEPA Comment No. 59: Page 8, 2nd paragraph

VOC samples cannot be composited, see QAPP comments. Revise this section to explain how VOC sidewall samples will be obtained.

Response:

The text in this paragraph has been revised in the 100% Design. Discrete VOC samples, instead of composite VOC samples, will be collected.

USEPA Comment No. 60: Page 10, 1st paragraph

"The surveyor will return after completion of the sampling program to record the as-built location of completed borings". Add "including step-out locations" here to clarify.

Response:

The text has been revised in the 100% Design as requested.

USEPA Comment No. 61: Table 1

This table has 9 PCB bottom sample locations, but 10 are referenced in text. Will there be a different approach to sampling at MA-S0203-SS? This needs to be discussed in the text and noted on the figures. Figure 1: This figure contains information that is inconsistent with boring results in Figures 2 and 3, see below.

Response:

The table has been updated to reflect the number of samples that will be generated based on the revised sampling scheme presented in the text. Sampling at location MA-S0203-SS will be deferred until the RA and is described in Section 3.4.8.2 of the 100% Design Report and Section 02221 of the Technical Specifications.

USEPA Comment No. 62: Figure 2

- ***These targeted sidewall sample depths must be the same depths as the depths of the proposed samples on Drawing 5C.***
- ***ETP-3007 has 1 foot of White Material here, but this is not noted on Figure 1. Revise Figure 1.***
- ***This figure shows 4 foot thickness of White Material at ESB-3018-06. But Figure 1 notes that the thickness of White Material at this location is 0.8 foot. Which one is correct? Explain and revise Figure 1.***
- ***ESB-1072 has As>300 ppm from -0.9 to -1.1 ft msl, but on Figure 1, it has a green symbol indicating no White Material or arsenic>300ppm is present. Revise Figure 1.***
- ***ESB-1067 has As>300 ppm from -3.2 to -5.2 ft msl, but on Figure 1, it has a green symbol indicating no White Material or arsenic>300ppm is present. Revise Figure 1.***
- ***ESB-1061 has As>300 ppm from -2.0 to -4.0 ft msl, but on Figure 1, it has a green symbol indicating no White Material or arsenic>300ppm is present. Revise Figure 1.***

Response:

The figures and text in Appendix H have been revised to address this comment.

USEPA Comment No. 63: Figure 3

- ***These targeted sidewall sample depths must be the same depths as the depths of the proposed samples on Drawing 5C.***
- ***ESB-1017 on this figure has As>300 ppm from -0.7 to -2.7 ft msl, but on Figure 1, it has a green symbol indicating no White Material or arsenic>300ppm is present. Revise Figure 1.***
- ***ESB-3015 has 0.5 thickness of White Material, but on Figure 1, it has a green symbol indicating no White Material or arsenic>300ppm is present and indicates "Trace". Explain and revise Figure 1.***

Response:

See response to USEPA Comment No. 62.

USEPA Comment No. 64: Figure 4

- ***Post depths of each arsenic REA on this map to provide context for the 28 arsenic bottom samples.***
- ***All labels and the symbols for previous sample locations should be larger.***
- ***The extent of the map should be the same as Figure 5, to make it easier to see.***

Response:

The REA excavation elevations shown on Drawing 5 of the Pre-Final (95%) Design Drawing package were developed for the purpose of determining material volumes and assess dewatering requirements. The excavation elevations required to remove Source Materials will not be determined until after receipt of the pre-excavation verification test results. Therefore, showing the REA excavation elevation from Drawing 5 on Figure 4 is not relevant. Figure 4 was provided to the USEPA to fit onto an ANSI B (11" x 17") sheet and in electronic format where the size can be expanded to larger than 11" x 17". This Figure, and other Figures in Appendix H that USEPA comments have indicated are too small in 11" x 17" size, will be provided on full size Arch E1 sheets in the 100% Design, consistent with the size that will be used for the 100% Design Drawings.

USEPA Comment No. 65: Figure 5

- ***This figure needs to be completely revised to correspond to the data shown in Figures 6, 7, and 8.***
- ***In VOC Area 3, ESB-1057-04 has 1.1 posted as the shallowest elevation of total COC VOCs ≤ 1 mg/kg. But Figure 8 has ESB-1057 showing a sample from 5.1 to 3.1 ft msl with elevated VOCs. What is the 1.1 elevation referring to here?***
- ***Also in VOC Area 3, ESB-1018-08 has 3.74 posted as the deepest elevation of total COC VOCs ≥1 mg/kg. But Figure 8 has ESB-1018 showing a sample from 2.5 to 0.5 ft msl with elevated VOCs. ESB- 1055 and ESB-1056 also have mismatched elevations in Figures 5 and 8.***
- ***In VOC Area 2, ESB-3026 and ESB-1052 have 0.5 and -0.5 posted as elevations of VOC samples, but these elevations don't correspond to the VOC samples presented on Figure 7.***
- ***In VOC Area 1, it seems that all of the depths posted do not correspond to samples presented on Figure 6.***
- ***Add feet msl to legend for the unit of elevation of boreholes.***

Response:

Figures 5, 6, 7 and 8 have been revised.

USEPA Comment No. 66: Figure 6

- ***Enlarge this figure to the same extent as Figure 5. Include the depths of the proposed sidewall samples, as in Drawing 5B.***
- ***Post depths of each VOC REA on this map to provide context for the 28 arsenic bottom samples.***

Response:

See response to USEPA Comment No. 64.

USEPA Comment No. 67: Figure 7

This figure has a range from 0.25 foot msl to -3 foot msl for the "Targeted Sidewall Sample Interval Projected to Interpreted Extent of VOC Impacts Shown on Figure 5". But Drawing 5B shows at -4 feet msl depth for the sidewall samples. These targeted sidewall sample depths must be the same depths as the depths of the proposed samples on Drawing 5B.

Response:

The targeted sidewall sample depths shown in the Pre-Excavation Verification Sampling Plan Figure 7 will be used during the pre-excavation sampling event. Drawing 5B has been deleted.

USEPA Comment No. 68: Figure 8

This figure has a range from 4 feet msl to -1 foot msl for the "Targeted Sidewall Sample Interval Projected to Interpreted Extent of VOC Impacts Shown on Figure 5" But Drawing 5B shows at -2 feet msl depth for the sidewall samples. These targeted sidewall sample depths must be the same depths as the depths of the proposed samples on Drawing 5C.

Response:

The targeted sidewall sample depths shown in the Pre-Excavation Verification Sampling Plan figures will be used during the pre-excavation sampling event. Drawings 5B and 5C have been deleted.

USEPA Comment No. 69: Figure 9

- ***The extent of the map should be the same as Figure 5, to make it easier to see.***
- ***Add depths of the sidewall samples, from Drawing 5B.***
- ***Post depths of each VOC REA on this map to provide context for the bottom and sidewall samples.***

Response:

The extents of the maps on Figures 5 and 9 are the same, as requested, in the 100% Design. The depths of the sidewall samples have been added (see also response to USEPA Comment No. 66). The bottom elevations of each VOC REA shown on Drawing 5 have not been provided as these elevations are subject to change based on the finding of the Pre-excavation Verification Sampling Program and are not being used to guide the verification sampling depths. See also the response to USEPA Comment No. 64 regarding the figure size used in the 100% Design.

USEPA Comment No. 70: Figure 10

- ***All labels and the symbols for previous PCB sample locations should be larger.***
- ***The extent of the map should be the same as Figure 5, to make it easier to see.***
- ***Add feet msl to legend for the unit of elevation of boreholes.***

Response:

Figure 10 has been revised in the 100% Design except that the depths shown are below ground surface as indicated in the legend.

USEPA Comment No. 71: Figure 11

- ***All labels and the symbols for previous arsenic sample locations should be larger.***
- ***The extent of the map should be the same as Figure 5, to make it easier to see.***

Response:

Figure 11 has been revised in the 100% Design.

AUGUST 4, 2014 SPECIFIC COMMENTS – APPENDIX I

USEPA Comment No. 72:

The QAPP is essentially a re-issue of the 2008 QAPP submitted as part of the Remedial Design Work Plan for the pre-design investigation work. The information provided after the end of the Table of Contents should be more specific as to which worksheets will be applicable to the work being proposed here. The worksheets should be revised to indicate the appropriate SOPs, analytical methods, and laboratories that is applicable for the current work.

Response:

The work covered under this QAPP relates to additional investigations that will be completed prior to the implementation of the remedy, similar to the testing that was completed as part of the PDI. Unless otherwise stated in this QAPP, 2008 QAPP worksheets will be used as appropriate. The table of contents for the QAPP in the 100% Design identifies which worksheets are not applicable for the pre-excavation verification sampling program.

USEPA Comment No. 73: Worksheet #13

The data resulting from the pre-design investigation should also be included as part of the secondary data.

Response:

The PDI data has been included by adding a reference to the January 2014 PDI Report in this worksheet in the 100% Design.

USEPA Comment No. 74: Worksheet #19

The applicable analytical SOPs for the pre-excavation verification sampling should be clearly indicated.

Response:

The SOPs for pre-excavation verification sampling follow those used during the PDI. See also response to USEPA Comment No. 72. Specific parameters to be collected during the pre-excavation verification sampling are indicated in Appendix H of the 100% Design, and the analytical SOPs in this worksheet are applicable.

USEPA Comment No. 75: Worksheet #23

The analytical SOPs being referenced here are dated around 2007. Please verify if the laboratory (Lancaster Laboratories) will be using the version as specified. If not, revised SOPs should be provided and affected worksheets should also be revised.

Response:

Updated SOPs from both Lancaster Laboratories and S_2C_2 have been provided in Attachment 2 of the QAPP in the 100% Design. The affected references in Worksheet #23 have also been updated.

USEPA Comment No. 76: Worksheet #30

Please verify the turnaround times required for the samples associated with the step-out/step-in borings that are being proposed.

Response:

A combination of 24-hour and standard turnaround times will be used during implementation of the Pre-excavation Verification Sampling Program for step-out/step-in borings, so that hold-times will not be exceeded on archived samples and sample results will not be qualified or invalidated for exceedance of a hold-time. These additional details and the judgment that will used to determine an expedited or standard turn-around time have been added to this worksheet in the 100% Design.

USEPA Comment No. 77: Worksheet #34

Please verify that the electronic data deliverable complies with Region 2's requirements.

Response:

The electronic data deliverables provided for in this worksheet will comply with the most current USEPA Region II MEDD format requirements and valid values, and will contain all field and QC sample results.

AUGUST 4, 2014 SPECIFIC COMMENTS – APPENDIX K

USEPA Comment No. 78:

No comments, but DEP permit will cover all possible pollutants including lead and mercury, so EPA would have recommended analysis of those metals in the treatability study

Response:

USEPA Comment No. 78 is noted.

SPECIFIC COMMENTS – APPENDIX L

USEPA Comment No. 79:

Action levels will be evaluated in the 100% design.

Response:

The action levels have been included and evaluated in this appendix in the 100% Design.

AUGUST 4, 2014 SPECIFIC COMMENTS – APPENDIX M

USEPA Comment No. 80:

What will the procedure be for identifying if the material is historic fill or MMC? What if it is mixed? In this case, the more conservative 139 mg/kg standard should be applied.

Response:

Visual classification methods will be used, as approved for the PDI. If materials are mixed, the lower, conservative XRF screening value of the mixed material will be used, as referenced in the comment.

AUGUST 4, 2014 REVIEW OF THE PRE-EXCAVATION VERIFICATION SAMPLING PLAN

USEPA Comment No. 81:

Section 2.0 Pre-Excavation Verification Sampling Frequency – This section indicates that for purposes of determining step-out or step-in borings (in the arsenic, VOCs and PCB source areas), decision will be made after the receipt of analytical data. It is not clear what turnaround time is being specified for these samples.

Response:

A combination of 24-hour and standard turnaround times will be used during implementation of the Pre-excavation Verification Sampling Program for step-out/step-in borings, so that hold times will not be exceeded on archived samples and sample results will not be qualified or invalidated for exceedance of a hold-time.

USEPA Comment No. 82:

Section 2.3 PCB-Impacted Material – The referenced Figure 10 did not include any sample label information. It is not clear which of the sample locations in Figure 10 is being referred to as MA- MW-14S.

Response:

Sample labels have been added to Figure 10 in the 100% Design.

USEPA Comment No. 83:

Section 3.3 VOC Source Material – It was indicated in the first paragraph that if no VOCs are detected in a sidewall boring, a composite sample will be collected from the depth intervals guided by the intervals shown on Figure 6, 7, and 8. VOC samples are typically not composited

due to a potential for VOC losses during the preparation of the composite. Please explain the rationale for using a composite sample for this purpose.

Response:

Section 3.3 has been changed in the 100% Design to reflect collection of discrete VOC samples rather than composite VOC samples.

RESPONSES TO USACE AUGUST 11, 2014 COMMENTS

Design Analysis Report

USACE Comment No. 1: General.

There are a number of incorrect Section references in the text. The document should be revised and updated.

Response:

The text in the 100% Design has been reviewed to check that correct Section, Drawing, Specification and Appendix references have been made and that they incorporate changes made in responses to Agency comments.

USACE Comment No. 2: Page 19, Section 3.4.5.

Clarify who will be collecting the groundwater elevations and analytical data prior to decommissioning the wells? This is not included in the specifications.

Response:

The Group will retain a qualified firm experienced in sampling in accordance with NJDEP procedures to perform this task. The Group will notify USEPA if it engages a different firm than has been used previously to complete Site activities. The 100% Design text has been edited accordingly.

USACE Comment No. 3: Page 19, Section 3.4.6.1 and Drawing 5, Note 4.

There is insufficient information provided to justify the vertical limits of the REAs and the different overburden zones. The DAR should be revised to include the rationale for the horizontal and vertical limits for the REAs. It appears based on Note 4 that not all available data was utilized. If certain analytical or boring log data was not used to establish the vertical or horizontal limits of the REAs, this should be addressed in the DAR.

Response:

The Group believes that there is sufficient information to justify the vertical limits shown in the Design, but has noted that these are not final limits and they may be adjusted based on the results of the pre-excavation verification sampling program. Such an approach to establishing excavation bottoms is the functional equivalent to completing post-excavation sampling.

See response to USEPA Comment No. 8 regarding Overburden zones.

All of the data collected during prior investigations were considered, but the 28 samples shown on the Drawings were used as Arsenic Source Material vertical delineation samples. The vertical limits of excavations will be determined based on the depth of arsenic impacts in the MMC, as shown in the cross section on Drawing 6. It should be noted that the REA floor elevations listed in the REA

Schedule and shown on Drawing 5 were developed for stability analyses and dewatering planning to depressurize the Cape May Formation. The 100% Design text provides additional detail on the rationale for the horizontal and vertical limits for the VOC and arsenic REAs and indicates that REA bottoms will be adjusted based on the finding of the Pre-excavation Verification Sampling Program.

USACE Comment No. 4: Page 21, last paragraph.

If an excavation cell cannot overlap Quadrant IV as indicated in the DAR, this must be included in the Specifications.

Response:

The 100% Design text has been revised to state that overlapping of excavation cells from other quadrants and Quadrant IV is not recommended, but will be allowed if vacuum wellpoints or other special dewatering methods are used with the excavation cell overlapping into Quadrant IV to control Cape May Formation piezometric levels and achieve the requirements of Specification Section 02140.

USACE Comment No. 5: Page 22, 3rd paragraph.

If stockpiles are not to be placed adjacent to the Comarco Building as stated in the DAR, this should be noted in the plans or specifications. Also, the Temporary Debris Stockpile shown next to the Comarco Building on Drawing 5 should be relocated. Revise the design as necessary.

Response:

See response to the second part of USEPA Comment No. 27.

USACE Comment No. 6: Page 25, last paragraph.

The last sentence on this page beginning with "As such, the remedial design relies on two primary protective measure…." is unclear, please revise.

Response:

The 100% Design text has been edited to clarify that the two referenced measures will protect the three-story Ponte Equities Building against structural damage that could be caused by the RA.

USACE Comment No. 7: Page 32, 2nd paragraph.

Clarify who is responsible for the concrete sampling, RAC or QAO.

Response:

The QAO will be responsible for concrete and masonry sampling, which is stated in Section 3.3.2 in the Construction Quality Assurance Project Plan (Appendix J). The subject paragraph has been corrected in the 100% Design to cross reference report Section 3.4.7.3, and Section 3.4.7.3 includes an additional reference to sampling being performed by the QAO.

USACE Comment No. 8: Page 34, 1st and 2nd paragraphs.

Provide the rationale for the 3 overburden zones. Include a discussion on how the elevation of each zone was determined within each REA.

Response:

See response to USEPA Comment Nos. 8 and 29.

USACE Comment No. 9: ***Page 35, Section 3.4.7.2.***

According to Drawing 5, P9 is also located in REA Q2V1 and would be handled with the VOC Source Material.

Response:

Agreed. The text has been corrected in the 100% Design to include P9 among the PCB samples included within the limits of VOC Source Material to be removed from REA Q2V1.

USACE Comment No. 10: ***Page 36, Section 3.4.7.3; Drawing 2, Note 4a; and Specifications 02221, Article 3.09A.***

Change the maximum allowable size of concrete to be used for backfill is from 18" to 12" in the DAR to be consistent with the plans and specifications.

Response:

As stated in the response to USEPA Comment No. 11, this change has been made in the 100% Design.

USACE Comment No. 11: ***Page 37, 3rd paragraph.***

If the RAC is required to remove a 10'x10' section of concrete centered on elevated PCB samples it should be clearly called out on Drawing 5 or in the Specifications. Clarify if there is a required thickness or depth.

Response:

See response to USEPA Comment Nos. 16 and 51. Requirements for sampling these locations have been added to Part 3.08 of Specification Section 02221.

USACE Comment No. 12: ***Page 43, last paragraph and Pre-Excavation Verification Sampling Plan, page 4.***

The DAR and the Sampling Plan are not consistent with respect to the step out borings for the arsenic source areas. Please revise as necessary to eliminate the inconsistencies.

Response:

The text on page 43 has been edited in the 100% Design to reference 10 to 25-ft step-out intervals for consistency with the Pre-Excavation Verification Sampling Plan.

USACE Comment No. 13: ***Page 44, 2nd paragraph.***

Change "REA bottom excavation contours" to "REA bottom excavation elevations" the vertical limits within each REA should not vary in the design.

Response:

The requested change has been made in the 100% Design. However, depending on the pre-excavation verification sampling results, the bottom of an REA excavation may not be a uniform elevation, but may have varying elevations similar to excavation profiles resulting after remedial excavations completed using post-excavation sampling results. The bottom source removal limits of an REA may be stepped or sloped based on the variations of the depth of pre-excavation verification samples within an REA or adjacent REAs.

USACE Comment No. 14: Page 45, Shallow Groundwater, 1st and 2nd bullet.

If the RAC will be required to utilize sequential sheeted cells in specific Quadrants to avoid handling excess amounts of groundwater this should be included in the specification.

Response:

The 100% Design text has removed the above-referenced use of the term "sequential." The RAC will determine its sequencing of sheeting required to complete removal of source materials and also manage groundwater within the capacity limitations of the on-site pretreatment and discharge systems, and to maintain stable excavations as required in the Drawings and Specifications.

USACE Comment No. 15: Page 45, Shallow Groundwater, 2nd bullet and Page 46, Cape May Formation Groundwater, 2nd bullet.

Both of these sections include a maximum excavation cell size for each situation. Is there a need to specify the maximum allowable open excavation or will this be left up to the RAC?

Response:

The size limitations referenced in the text are recommended guidelines for sheeted excavation cell dimensions, and the text indicates that theses guideline sizes may be exceeded by the RAC depending on conditions encountered during RA implementation, and provided that the RAC continues to manage groundwater within the capacity limitations of the on-site pretreatment and discharge systems, and to maintain stable excavations as required in the Drawings and Specifications. Therefore, the maximum allowable open excavation has not been specified.

USACE Comment No. 16: Page 48, 3rd paragraph.

Remove the text "to take advantage of expected dilution of arsenic".

Response:

The text has been revised as requested in the 100% Design.

USACE Comment No. 17: Page 52, Section 3.4.10.1 and 3.4.10.2.

In Section 3.4.10.1, clarify the statement "RAC will promptly place NJDEP Clean Fill to the above-referenced elevation …". Assume the NJDEP Clean fill is actually "12-inches of cushion backfill" discussed in Section 3.4.10.2. Material names should be consistent.

Response:

The 100% Design includes clarification that the "above-referenced elevation" refers to use of NJDEP Clean Fill to backfill arsenic REAs from the bottom to the level above the Cape May piezometric groundwater contours shown on Drawing 4, or lower/higher depending on Cape May piezometric

levels measured during the RA. As stated in Appendix B, groundwater monitoring including the Cape May Formation piezometric level in existing monitoring wells that will not be decommissioned will be performed during the period when pumping from the Cape May Formation may require contingent use of the infiltration pit. Such monitoring will determine if piezometric levels are present that are higher than those shown on Drawing 4, necessitating an increased elevation for the top of NJDEP Clean Fill backfill.

All imported fill used to backfill REAs will be NJDEP Clean Fill. The Report text in Section 3.4.10 has been edited in the 100% Design to include the specific classes of NJDEP Clean Fill specified in the Technical Specifications (e.g., General Backfill and Cushion Soil).

USACE Comment No. 18: Page 54, 1st bullet.

Change "temporary asphalt sidewalk" to "asphalt sidewalk".

Response:

See response to USEPA Comment No. 22.

USACE Comment No. 19: DAR.

Include a discussion that addresses water/liquid management for all water generated onsite. Include the rationale for any special handling and disposal such as the potentially PCB impacted water referenced in Specifications Section 2402 Article 3.04.

Response:

The 100% Design includes a new text subsection 3.4.9.2.4 that addresses water/liquid management for water sources other than pumped groundwater, which is addressed in the prior sections. The subsection includes the requirements for management of potentially PCB-impacted water, potential non-aqueous liquids, large diameter pipe liquids, and water treatment system decontamination effluent. These requirements described in the text are be consistent with the requirements of Specifications Section 02402.

Drawings

USACE Comment No. 20: Drawing 2, Note 4 c; Specifications 02221, Article 3.09 B; and DAR, Page 36, paragraph 3.4.7.3.

The drawings require the Contractor to stockpile concrete from individual structures separately. The specifications require the Contractor to stockpile concrete from each REA separately and the DAR discusses both. Please revise the documents to eliminate the discrepancy.

Response:

In the 100% Design, the Report text and Section 02221 of the Technical Specifications have been revised to consistently state that concrete/masonry from individual structures will be segregated and stockpiled separately from debris from other structures until sampling and analysis determines that the structure does not contain Source concentrations of arsenic or total VOCs, or PCBs greater than 1 mg/kg. Concrete debris from a structure containing Source concentrations of arsenic or total VOCs will be disposed off-site. The Group may elect to use concrete/masonry debris containing PCBs less than 50 mg/kg as backfill under the cover of a cap protecting against direct contact, or may elect to dispose debris containing PCBs greater than 1 mg/kg off-site.

USACE Comment No. 21: Drawing 2, Note 4c.

Note indicated that concrete deemed unsuitable for reuse as backfill shall be disposed of off-site. Clarify the criteria that will be used to make this determination or add a reference to the appropriate specification.

Response:

Note 4c has been revised in the 100% Design to state that debris from a concrete structure with at least one sample found to contain arsenic or total VOCs greater than Source cleanup goals shall be disposed off-site. A reference to Specification Section 02221 has also been added.

USACE Comment No. 22: Drawing 2, Note 7b.

Clarify statement "seal south end of pipe outside REA sheet pile line" since there is no sheet pile shown at the south end of the pipe on any of the plan view drawings.

Response:

Note 7B on Drawing 2 has been edited in the 100% Design to "seal south end of pipe at the Practical Limit of Excavation."

USACE Comment No. 23: Drawing 5, REA Table.

The areas provided on the Table for REAs Q1V4, Q1V6, Q2A3, and Q2A4 are not consistent with the areas listed on the drawings.

Response:

The REA Schedule on Drawing 5 in the 100% Design has been corrected to list the REA areas shown in each REA label in the layout plan on Drawing 5.

USACE Comment No. 24: Drawing 5.

Once the limits of the PCB contamination are verified, it would not be necessary to call out P2, P9, P11 or P12 as separate excavation areas because these areas would be addressed with the VOC material.

Response:

It is possible that the concentrations of PCBs determined during the pre-excavation delineation sampling could affect the acceptability of the excavated VOC Source Material at off-site disposal facilities. In addition, due to the sensitivity of PCBs in excavation water being discharged to the City of Camden sewer, P2, P9, P11 and P12 areas will be excavated separately, with excavation material decontaminated before proceeding to excavation of VOC Source Material outside of the areas where PCBs greater than 1 mg/kg area detected.

USACE Comment No. 25: Drawing 5.

Once the pre-excavation verification sampling is complete and the final excavation limits are established a table with excavation control coordinates should be included in the design.

Response:

Excavation control coordinates will be developed after completion of the Pre-excavation Verification Sampling Program. This information will be provided to the RAC to include within the RAWP, because the program will be performed after the anticipated approval of the 100% Design.

USACE Comment No. 26: Drawing 6.

This drawing should be revised to show the excavation limits based on the REAs shown on Drawing 5 and the dark blue line labeled "Preliminary (first cut) Limit of Excavation (see Note 2) should be deleted. These cross sections should also include the different overburden zones for each REA.

Response:

Drawing 6 has been revised to show typical REA sections as discussed with USEPA and USACE during the August 21, 2014 design review meeting.

USACE Comment No. 27; Drawing 7 and DAR, page 18, Section 3.4.3.

Please clarify if this is a conceptual layout or a required layout. According to the DAR this is a conceptual layout. If the overall layout is conceptual but there are specific items required to be installed at the designated locations, this should be clearly identified.

Response:

The layouts of the items shown on Drawing 7 conform to the requirements of the Technical Specifications. The Contactor will be allowed to deviate from the layouts shown provided the deviations meet the requirements of the Technical Specifications and are included in the RAWP.

USACE Comment No. 28: Drawings 5 and 8.

Schematic Section 2 on Drawing 8 shows 2 rows of temporary excavation support, but the plan view on Drawing 5 only includes the exterior excavation support. It is assumed the interior excavation support shown on Section 2 is optional based on the Contractor's means and methods. If that is the case, please revise the call out notes on the section.

Response:

The RAC has provided its proposed design of excavation support in Appendix C-2. Drawing 5 and Section C on Drawing 8 in the 100% Design continue to show the schematic of the planned support system along South 6th Street, and include notes referring to Appendix C-2 for the 100% design prepared by the RAC. More detailed layout of the RAC-designed system will be provided in the RAWP.

USACE Comment No. 29: Drawings 5 and 8.

Schematic Section 4 on Drawing 8 shows temporary excavation support 35' off the Ponte Building but this excavation support is not shown on Drawing 5. If the Contractor is required to install this temporary excavation support it should be shown on Drawing 5.

Response:

Drawing 5 has been revised in the 100% Design to show the excavation support symbol along the Practical Limit of Excavation 35' off the Ponte Building. Notes have been added to Section B and D on

Drawing 8 to state that the temporary excavation support designs for the systems shown in the details and systems to be installed for the interior excavation cells will be provided in the RAWP.

USACE Comment No. 30: ***Drawings 5 and 8.***

Include the required off set from the edge of 6th Street on the Typical Section 3.

Response:

The sheeting shown on Section C in Drawing 8 follows the eastern property lines of the Scrapyard, Martin Aaron, and Ponte Equities properties. As noted on the section, the distance between the edge of South 6th Street and the property line varies as shown on the Map of Survey.

USACE Comment No. 31: ***Drawing 9, Geosynthetic Clay Liner Detail.***

This section shows REA Q4A5 on the left and Q4A6 on the right with the bottom elevations the same. But the bottom elevations for these REAs are different according to Drawing 5. Clarify if this is intended to be a section or a typical detail.

Response:

Because this is meant to depict a typical section instead of a specific cross section, the reference to specific REAs has been removed and Detail 3 on Drawing 9 has been relabeled to be a typical section in the 100% Design.

USACE Comment No. 32: ***Drawing 14.***

Provide the width of the sidewalk. Also, change "Temporary Sidewalk" to "Asphalt Sidewalk" in the details and Sidewalk Notes.

Response:

The sidewalk varies in width around the Site periphery, but in all cases the new sidewalk will extend the full width from the curb to the property line as depicted by the typical section on Drawing 14. References to "Temporary Sidewalk" have been removed.

Also see response to USEPA Comment No. 22.

USACE Comment No. 33: ***Drawings 11 and 14 and Specifications 02224, Articles 2.02, 2.03 and 3.03.***

The specifications require different materials and compaction requirements for cover soil – outside right-of-ways and cover soil - within right-of-ways, but the right-of-ways is not identified on the drawings. The material names used should be consistent. The plans and specification should be revised to eliminate the inconsistency.

Response:

The referenced roadway rights-of-way are identified on the Map of Survey included in the Drawing package, and have been added to Drawings 11 through 14 in the 100% Design. References to material names have been revised in the 100% Design to provide consistency among the Drawings and Specification sections.

Technical Specifications

USACE Comment No. 34: Section 01300, Article 1.01B and 1.09.

EPA should be given an opportunity to review and approve the Remedial Action Work Plan prior to the start of construction. This is addressed in the DAR but not in the specifications.

Response:

Section IX.C in the Statement of Work attached to the Consent Decree states that USEPA will either approve the RAWP or require modification of it in accordance with procedures set forth in Section XI of the Consent Decree. This provision has been included in Article 1.09 of Section 01300 of the Technical Specifications in the 100% Design.

USACE Comment No. 35: Section 01720.

A drawing that includes all clean verification samples along with the final excavation limits will be required as part of the Remedial Action Report. There should also be a table summarizing the verification sample results from the PDI and the Pre-Excavation Verification Sampling.

Response:

Specification Section 01720 (Record Documents) primarily address requirements for record documents to be prepared by the RAC.

Section 1.1 in Appendix H (Pre-excavation Verification Sampling Plan) states that the drawings and data generated during implementation of the Pre-excavation Verification Sampling Program will be provided to USEPA for review and approval as part of the RAWP prior to implementation of the Remedy.

USACE Comment No. 36: Section 02221, Article 3.01 J.

The specifications indicate the Contractor shall construct lined stockpile areas as shown on the Contract Drawings. The only stockpiles shown are on Drawing 7. Clarify if the Contractor is required to construct the stockpiles at these locations as indicated in the specifications.

Response:

The layouts of temporary features shown on Drawing 7 are conceptual. The RAC is permitted to modify these locations within the requirements of the Technical Specifications. Layouts of temporary features, including stockpiles, prepared by the RAC will be provided in the RAWP.

USACE Comment No. 37: Section 02223, Article 3.03 and DAR, Section 3.4.10.1.

The placement and compaction requirements provided in the specification for the general backfill and cushion material are not consistent with the compaction requirements discussed in the DAR. Please revise as necessary.

Response:

The Report text in the 100% Design has been edited to be consistent with the compaction requirements of this specification section.

USACE Comment No. 38: Section 02223 Article 2.03B and DAR Section 3.4.10.2.

The specifications should clearly state the cushion soil shall be imported NJDEP clean fill as discussed in the DAR.

Response:

Article 2.01A of Section 02223 requires all imported materials to environmentally clean, in accordance with N.J.A.C. 7:26E of the Technical Specifications. This requirement applies to the cushion soil and other imported fill.

Appendix H – Pre-Excavation Verification Sampling Plan

USACE Comment No. 39: Figures 1, 2 and 3.

Verify the thickness of the White Material is shown correctly on both the plan view and cross sections. There appears to be some inconsistencies which should be corrected. For example, the plan view lists 0.8' thickness for the White Material in boring ESB-3018-06, while the cross section shows about 4' of White Material.

Response:

Inconsistencies between figures have been corrected in the 100% Design.

USACE Comment No. 40: Figure 1.

According to the legend the green square represents borings with the absence of White Material or arsenic >300 ppm, but many of the borings that are shown with this symbol have elevated levels of arsenic according to the cross section. For example ESB-1064, ESB-1067 and ESB-1070. This drawing should be corrected.

Response:

The figure has been modified to indicate the presence of White Material or material with arsenic greater than 300 mg/kg (red circles) and the absence of White Material (green circles).

USACE Comment No. 41: Page 4, Section 2.1.1.

Clarify how the step out distance of 10' or 25' will be determined.

Response:

The offset dimension will be a function of the thickness of White Material observed and/or the magnitude of arsenic concentration above 300 mg/kg. The text has been revised to include this description.

USACE Comment No. 42: Page 4, Section 2.1.2 and Figures 1 and 4.

It is unclear how the vertical limits of the REA were established and it is difficult to confirm if the proposed sampling interval is acceptable. Please provide a plan view drawing showing the locations of all existing borings and test pits along with the proposed horizontal limits of the REAs. Verify that all analytical and visual observations of White Material were utilized in determining the proposed vertical limits of the REAs. For example the White Material in ESB-3018-05 and ESB-3032 extends down to elevations -4 and -3, respectively. Both borings appears to be located in REA Q2A4 with a floor elevation of 0, which would not be deep enough to remove all contamination.

Response:

As discussed with USEPA and USACE during the August 21, 2014 design review meeting, example REA cross sections have been provided on Drawing 6 to illustrate the procedure that will be used to determine the REA bottoms after completion of the Pre-excavation Verification Sampling Program. Section 3.4.6.1 of the 100% Design describes the procedure that will be used to establish REA bottom elevations after completion of the Pre-excavation Verification Sampling Program. The additional information requested will be provided with the summary report to be provided with the Excavation Drawings that are to be submitted with the RAWP that will allow USEPA and USACE to verify REA bottom elevations are consistent with the results of fixed-laboratory test data.

USACE Comment No. 43: Figure 4.

This drawing should be replaced with Drawing 5C.

Response:

Drawing 5C has been eliminated from the 100% Design. However, the relevant information shown on Drawing 5C has been included in Figure 4.

USACE Comment No. 44: Page 5, Section 2.3 and Table 1.

The text indicates there are 10 bottom samples but the Table lists 9.

Response:

See response to USEPA Comment No. 61.

USACE Comment No. 45: Page 7, Section 3.2.2 and DAR, page 44.

Sampling the 24 inches below the White Material is inconsistent with the REA approach. With the REA approach, the bottom samples would be collected at the proposed excavation floor elevation. Please clarify the rationale.

Response:

See response to USEPA Comment No. 58.

USACE Comment No. 46: Page 8, Section 3.3.

All VOC samples should be grab sample not composite samples.

Response:

The requirement to collect VOC samples as discrete samples has been included in Section 2.2.1.

USACE Comment No. 47: Figures 5, 6, 7 and 8.

The deepest and shallowest elevations posted on Figure 5 are not consistent with the cross sections. Please verify the information presented and revise as necessary.

Response:

Figures 5, 6, 7 and 8 have been revised to eliminate inconsistencies in the 100% Design.

USACE Comment No. 48: ***Figure 9.***

This drawing should be replaced with Drawing 5B.

Response:

Drawing 5B has been eliminated from the 100% Design. However, the relevant information shown on Drawing 5B has been included in Figure 9.

Very truly yours,

GOLDER ASSOCIATES INC.

Andrew Harpur, PE
Senior Engineer

Robert E. Stetkar, PE
Principal

Attachment

AH/RES:lrr